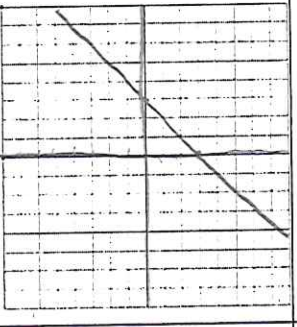
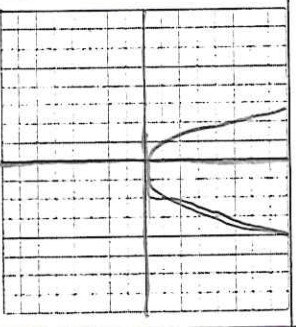
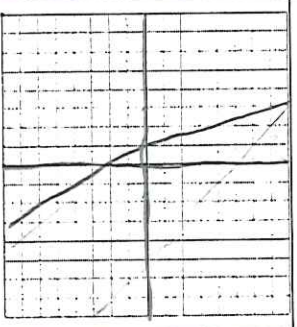
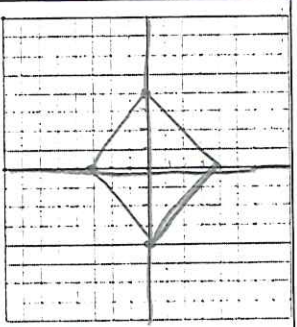
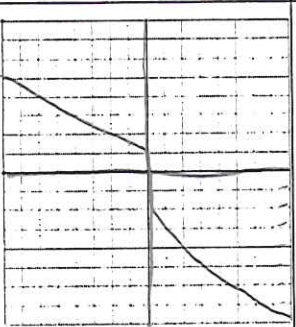


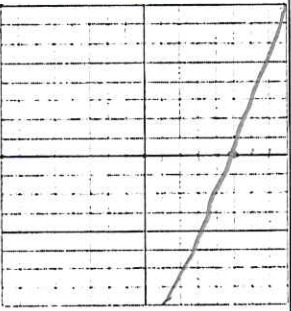
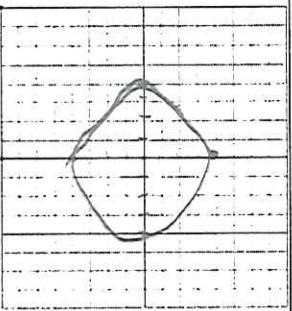
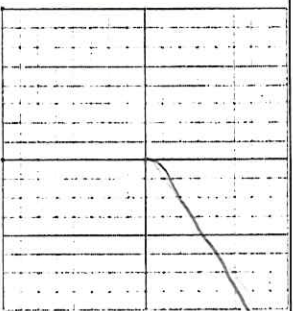
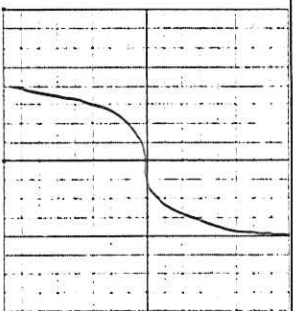
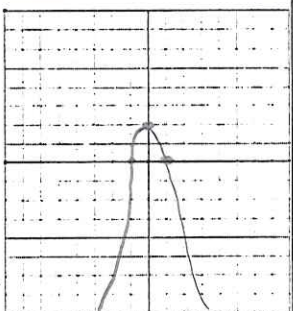
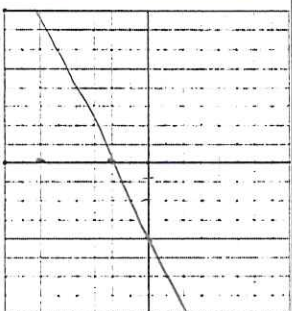
Determine if an equation graph represents a linear relationship

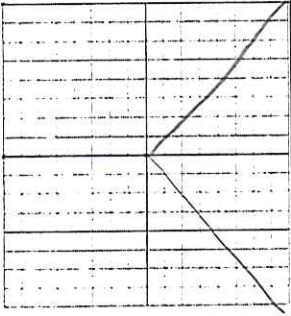
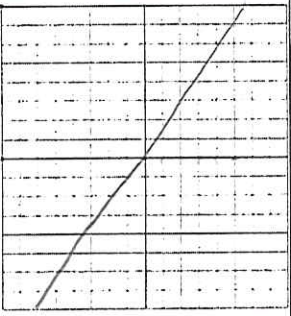
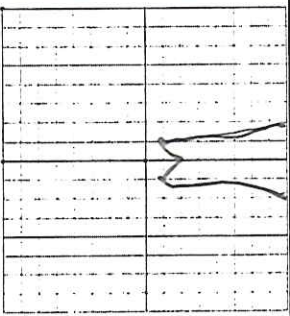
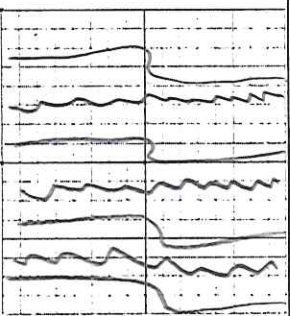
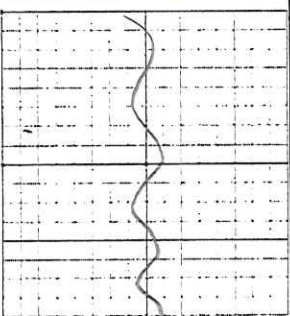
Leslie Cano
10/29/10

Computer Lab Graphing Assignment

Directions: Use "grapher" to graph each equation below. Use the coordinate plane to sketch a graph of the equation. Then determine if the equation and graph are linear or non-linear.

EQUATION	WHAT TO ENTER	GRAPH	LINEAR OR NON-LINEAR?
$y = x + 3$	$y = x + 3$		linear
$y = x^2$	$y = x^2$		non-linear
$y = -3x - 1$	$y = -3x - 1$		linear
$ x + y = 4$	$\text{abs } x + \text{abs } y = 4$		non-linear
$y = x^3$	$y = x^3$		non-linear

$x + y = 5$	$x + y = 5$		linear
$x^2 + y^2 = 16$	$x^2 + y^2 = 16$		non-linear
$y = \sqrt{x}$	$y = \sqrt{x}$ You will find the square root symbol under edit – special characters.		non-linear
$y = x^3$	$y = x^3$		non-linear
$x = y^2 - 2$	$x = y^2 - 2$		non-linear
$y = 0.5x - 2$	$y = 0.5x - 2$		linear

$y = x $	$y = \text{abs } x$		non linear
$2x + 3y = 0$	$2x + 3y = 0$		linear
$y = x^4 - 2x^2 + 2$	$y = x^4 - 2x^2 + 2$		non-linear
Write your own equation $\tan x = y$	$\tan x = y$		non-linear
Write your own equation $\sin x = y$	$\sin x = y$		non-linear

Questions:

1. List all of the equations which make linear graphs.

$$x+3, -3x-1, \cancel{x+1}, \cancel{x+y=5}, y=0.5x-2, \cancel{3x+3y=0}, 3x+3y=0$$

2. List all of the equations which do not make linear graphs.

$$x^2, x^3, x^2+y^2=10, y=\sqrt{x}, x^3, x=y^2-2, y=x^4, -2x^2+2, \tan x=y, \sin x=y, |x|+|y|=4, y=|x|$$

3. What do you notice about the type of equations that make linear graphs?

Linear equations have single variables, & have no exponent.

4. What do you notice about the type of equations that make non-linear graphs?

Non-linear equations have exponents, absolute value, square roots, variable in the denominator, ... of a variable

5. Write an equation which you think would make a linear graph. Then graph the equation and sketch the results. Was your prediction correct?

Equation: $21x^2=y$

Explain why you thought that the equation you wrote would be a linear function?

Because it's different than the other equations

